

VIII. *On some new and little-known Bornean Lycaenidae; together with a revision of the Thecline genus Thamala, Moore.* By J. C. MOULTON, F.L.S., Curator of the Sarawak Museum.

[Read December 4th, 1912.]

PLATE X.

HAVING recently published a paper on the Lycaenidae of Borneo,* it is perhaps only natural to expect further material to present itself at once, thereby necessitating modifications and additions to a work just "completed." Two interesting specimens, lent me for examination by Mr. H. H. Druce, have led me to work out the Thecline genus *Thamala*, Moore, which has been treated with much uncertainty by different authors for many years past owing to the rarity of specimens in collections; and the study of further material has brought to light some details of synonymy in other Lycaenids, so that it seems advisable to place these notes on record as soon as possible.

To the authorities of the British Museum I am much indebted for facilities accorded in studying their collections. Through Mr. F. H. Gravely of the Indian Museum I was able to examine some rare specimens belonging to that Museum. Mr. Noakes, Curator of Mr. Joicey's collection of Lepidoptera, was also kind enough to bring me specimens of *Thamala* to examine. The numbers before each species refer to the numbers used in my paper mentioned above.

The number of different species of Lycaenidae now known from Borneo is 302, of which 118 are not at present

* "A List of the Butterflies of Borneo with descriptions of New Species. Part III. Lycaenidae." Journal of the Straits Branch, Royal Asiatic Society, No. 60, 1911, pp. 73-177, with one plate.

recorded elsewhere. They are divided into seven sub-families thus :—

	<i>Gerydinae.</i>	<i>Lycaeninae.</i>	<i>Caretinae.</i>	<i>Liphyrinae.</i>	<i>Poritinae.</i>	<i>Archopalinae.</i>	<i>Thecinae.</i>	
Total recorded from Borneo	33	76	2	1	15	70	105	= 302
Confined to Borneo .	18	27	—	—	7	18	48	= 118

296b. *Lycaenopsis (Notarthrinus) boulti*, Chpmn.

Notarthrinus boulti, Chpmn., Ent. Mo. Mag., p. 103, pl. vi, figs. 1-5 (1912).

Described from two males captured on Mt. Klingkang, alt. 2,500 ft., October 1911, and one female taken near Limbang, June 1911; both localities being in Sarawak, although some 400 miles apart. These are the only three examples yet known; the types (male and female) are in the British Museum, the third specimen (male) is in the Sarawak Museum. Dr. Chapman places the species provisionally under *Notarthrinus*, and suggests that when more is known of it a new genus will probably be necessary.

316. *Lycaenopsis moultoni*, Chpmn. (Plate X, figs. 8 and 9).

This species, originally described from males only, has since been taken *in cop.* with a species described by me later as *Lycaenopsis oskewa*; this last name therefore gives way before that of Dr. Chapman, and the following synonymy becomes necessary :—

Lycaenopsis moultoni, Chpmn., Trans. Ent. Soc. Lond., p. 184, pl. xxviii, figs. 5, 6, 7 (1911).

Lycaenopsis (Neopithecops) oskewa, Moulton, Journ. Str. Br., Roy. Asiat. Soc., No. 60, p. 90 (1911).*

* Two females representing seasonal forms (one with large iridescent discal patch and the other with this patch reduced) were unfortunately described as female and male.

317. *Lycaenopsis matanga*, Chpmn. (Plate X, fig. 11).

In 1910 two *Lycaenopsis*s (representing two species as I thought) were sent to Dr. Chapman for determination. Unfortunately they were in bad condition, and Dr. Chapman finding no differences in their genitalia described them as one species (*Lycaenopsis matanga*), depositing the type in the British Museum and returning the co-type to me in Sarawak. Later, two more examples of a species agreeing well with Dr. Chapman's figure of *matanga* were obtained in Sarawak, but they were so different to the co-type, which was alone available to me for comparison, that I was induced to describe them as new under the name of *Lycaenopsis delapra*. Since returning to England I have now compared these with Dr. Chapman's type of *matanga* and find them identical, so that my species sinks before his. However, there are six more specimens in the Sarawak Museum exactly agreeing with his co-type and uniformly differing from his type. These are therefore left without a name, as, although apparently alike in genitalia, they are sufficiently constant in their differences from *matanga* to warrant separation from that species, and I now describe them as *Lycaenopsis chelaka*. The synonymy of *L. matanga* is now thus :—

Lycaenopsis matanga, Chpmn., Trans. Ent. Soc. Lond., p. 185 (*in parte*), pl. xxviii, fig. 1 (1911).

Lycaenopsis delapra, Moulton, Journ. Str. Br., Roy. Asiat. Soc., No. 60, p. 98 (1911).

318. *Lycaenopsis chelaka*, n. sp. (Plate X, fig. 10).

Lycaenopsis matanga, Chpmn., l.c. p. 185 (*in parte*).*

♂. *Upperside*. Dark fuscous brown; sub-discal area of fore-wing iridescent violet blue. *Fore-wing*: the violet-blue area extends from median nervure to inner margin

* The following passages in Dr. Chapman's description of *L. matanga* refer to *L. chelaka* :—"On the upper wing is an area of blue, rather violet in one specimen. . . . In one specimen it is a little more restricted. In the hind-wing there is a slight central tint in one specimen." His detailed description of the underside also refers to this species.

not quite reaching the base of wing or touching the outer third of hind margin. *Hind-wing*: a few violet-blue scales at the base of the 1st and 2nd median nervures (in some specimens hardly apparent).

Underside. Greyish-white. *Fore-wing*: a dark line closes cell; post-discal series of 6 dark spots light-edged arranged thus:—the first four in a line curved inwards towards the costa, the first and third spots sloped inwards, the second and fourth run parallel to hind margin; the fifth and sixth placed nearer the base and slightly sloping towards anal angle. Hind-marginal border of double row of small dark curved lines inwardly and outwardly edged with whitish-grey, especially towards anal angle. *Hind-wing*: dark spot below costa near base, larger spot on costa near apex; dark spot in cell, a line closing cell; post-discal row of 6 spots, the first four in line curving downwards and inwards, the fifth and sixth placed well out at anal angle. Well-marked hind-marginal border consisting of continuous series of dark lines succeeded outwardly by a line of internervular spots whitish-edged; an anteciliary dark line. Cilia of both wings fuscous. Fore-wings pointed as in *L. matanga*.

Exp. al. ♂, 26 mm.

Type ♂. Matang Road, Kuching, Sarawak, 17. vii. 11. (British Museum).

Six other examples have been taken in the vicinity of Kuching, including Dr. Chapman's co-type of *matanga*, which I have deposited in the British Museum.

L. matanga, Chpmn., has also been taken in this locality as well as on Mt. Matang.

326. *Nacaduba lugine*, H. H. Druce. (Plate X, fig. 12).

The only known female, which was described in my recent paper and figured in this paper, is now deposited in the British Museum for safe preservation and to facilitate studies necessitating the examination of types.*

* For these reasons other types of Bornean Lycaenidae have been presented now by the Sarawak Museum to the National collection at South Kensington. They include the following: *Allotinus strigatus*, Moulton, ♂ and ♀, *A. borneensis*, Moulton, ♂ and ♀, *Logania drucei*, Moulton, ♂ and ♀, *Lycaenopsis lingga*, Moulton, ♀, *L. nigerimus*, Moulton, ♂, *L. moultoni*, Chpmn., ♂ and ♀, *L. matanga*,

339. *Lampides kondulana*, Feld.

This species was recorded from Borneo with some doubt, after examining a single worn male in the Sarawak Museum. I have since seen another male from the Indian Museum which bears the label "Borneo—W. Davison."

390. *Arhopala meander*, Boisd.

Mr. Druce kindly points out a mistake I made in including New Zealand in the geographical distribution of this species. It should have been New Ireland. No *Arhopalas* occur in New Zealand.

461. *Pratapa calculis*, H. H. Druce.

This species is very near the Indian species, *Camena carmentalis*, de Nicéville, but may be separated from that species at once on comparing the anal markings on the underside of the hind-wing. In *calculis* the orange-yellow covers the anal angle, while in *carmentalis* it is restricted to a narrow edging round the two black spots at the anal angle. The difference appears constant and the merging of the two species does not therefore seem necessary.

THAMALA, Moore.

It would appear that there is considerable confusion between the two species comprising this genus (*T. marciانا*, Hew., and *T. miniata*, Moore). De Nicéville suggested that the two species were really one; however, on examining the types, it appears that there are two quite distinct species, although neither of them can stand as described by their original authors. Hewitson described a male and female belonging to two different species as *marciانا*. I propose to retain his name for the female only. Later

Chpmn., ♂, *L. chelaka*, Moulton, ♂, *L. boulti*, Chpmn., ♂ and ♀, *L. sonchus*, Druce, ♀, *Nacaduba lugine*, Druce, ♀, *N. angusta*, Druce, ♀, *Lampides vyeri*, Moulton, ♂, *L. virgulatus*, Druce, ♀, *Poritia pasira*, Moulton, ♂ and ♀, *P. philura*, Druce, ♀, *Arhopala incerta*, Moulton, ♂, *A. sarawaca*, Moulton, ♂ and ♀, *A. tembaga*, Moulton, ♂ and ♀, *A. shelfordi*, Moulton, ♀, *A. rajah*, Moulton, ♂, *Tajuria sunia*, Moulton, ♀, *Chliaria balua*, Moulton, ♂, *Charana splendida*, Moulton, ♂, *Horaga albistigmata*, Moulton, ♂, and *Deudorix strephanus*, Druce, ♀.

Moore described two males (like Hewitson's type male) as *male and female miniata*. These two I propose to regard as the male types of *miniata* and to refer Hewitson's male *marciana* to them. Eight years later Moore described a female *miniata* which should be referred in all probability to *marciana*, as it appears from the figure to differ only from the female of that species in having a greater development of fulvous in the discal region of the fore-wing upper-side. The actual specimen is in the Indian Museum and for the moment not available for comparison.

We have thus *marciana* known from females only, and *miniata* only from males. In the British Museum collection, however, there are five females quite different from Hewitson's *marciana*, which I refer to *miniata* without any hesitation. Swinhoe in his *Lepidoptera Indica* figures one of them, although in his references he accepts Moore's female as the type female of the species, which, as mentioned above, probably should be referred to Hewitson's *marciana*.

Mr. Druce has shown me lately two fine males from South Borneo—very different to the *miniata* males—which agree exactly on the underside markings with the *marciana* females, and I have no doubt that these are really the hitherto unknown males of Hewitson's species. The following descriptions, illustrated by Mr. Knight's figures, I hope will help towards a better understanding of the two species. The synonymy necessitated is rather complicated, but I trust the references given under the two names, and my note on the bibliography,* will make it clear.

* BIBLIOGRAPHICAL NOTE ON THAMALA.

- HEWITSON (1863-8 ?) describes and figures a male and female as *Myrina marciana*; these are now regarded as male *miniata* and female *marciana*. The actual female labelled "Sarawak" is now in the British Museum, and is regarded as the female type of *marciana*; the male is not to be found.
- MOORE (1878) describes two males as male and female *Thamala miniata*, without any reference to Hewitson's *marciana*. These two specimens are now in the British Museum, and that labelled "male" is taken as the actual male type of *miniata*.
- MOORE (1886) describes and figures a female (without reference to his previous female type) as *miniata* female. This is now regarded as a female variety of *marciana*. The actual specimen is in the Indian Museum.
- BUTLER (1877), in his list of the butterflies of Malacca, mentions a male from Malacca, and gives, as reference, Hewitson's description and figure of the female. There is only one example in the British Museum from Malacca and that is a female, so

480. *Thamala marciana*, Hew. (Plate X, figs. 1-3).

Myrina marciana, Hewitson, Ill. Diurn. Lep., p. 34, n. 22, pl. xii, figs. 12, 13, ♀, nec pl. xvi, fig. 44, ♂ (1863). Type specimen in British Museum.

Myrina marciana, Butler, Trans. Linn. Soc. Lond., Zool., i, p. 549, No. 4 (1877).

Myrina marciana, Distant, Rhop. Malay., p. 282, Tab. xxiii, fig. 15, ♀ (1885).

Thamala miniata, Moore, Journ. Linn. Soc., xxi, p. 42, pl. iv, fig. 1, ♀ (1886). Type specimen in Indian Museum.

Thamala miniata, de Nicéville, Butterflies of India, fig. 213, ♀, nec 212, ♂ (1895). Same specimen described by Moore, now in Indian Museum.

The male is now described for the first time.

♂. Plate X, fig. 1.

Upperside. Fore-wing: deep scarlet, apical half, costal and inner margins narrowly, hind margin broadly, dark fuscous. Median nervure joining apical region fuscous, 1st median nervule also marked with fuscous. *Hind-wing*: dark fuscous, except for scarlet patch below outer portion of costa, extending down across outer part of cell and nearly to apex, and bluish-white area extending from end of 3rd median nervule across anal region to inner margin. Dark fuscous anteciliary line, spot at base of tails and on anal lobe.

Underside. Fulvous ochreous. Sub-hind-marginal line in fore-wing barely noticeable. *Hind-wing*: broad white

presumably Butler's statement as to sex must be regarded as a misprint, though it should be noted that the specimen in the British Museum bears a manuscript label "*Myrina marciana*, Hewitson, ♂."

DISTANT (1883) refers to the Malaccan specimen mentioned by Butler and figures it as a female, without, however, commenting on Butler's mistake.

DE NICÉVILLE (1895) suggests *marciana* and *miniata* will prove the same species. He figures a pair as *miniata*, the female of which is probably the *marciana* var. figured by Moore and now in the Indian Museum; the male is typical *miniata*.

DOHERTY (1895), quoted by de Nicéville, regards the two species as one, "knowing them both in life."

SWINHOE (1911) figures a pair of true *miniata* from Tenasserim.

bar from inner margin to base of lobe inwardly and outwardly edged with narrow black line; the continuation of this bar can be traced to the 3rd median nervule. Anal region white with deep black spots on lobe and between 1st and 2nd median nervule, and greyish spot between these two dark spots at base of tail; thin black line between 2nd and 3rd median nervule, black anteciliary line from anal angle to end of radial nervure. Cilia white to this point; above it and in fore-wing dark fuscous.

Exp. al. ♂, 31 mm.

Described from two males from Tameang Lajang, South-West Borneo (Semper coll. 1907) in Mr. Druce's collection.

♀. Plate X, fig. 2.

Upperside. *Fore-wing*: dark fuscous, with orange fulvous spots half encircling a dark sub-discal portion which borders the median nervure extending across the 1st and 2nd median nervules to the 3rd median nervule. *Hind-wing*: upper half dark fuscous, lower half whitish-blue. This latter portion extends unevenly from end of sub-costal nervure across to inner margin. Cilia whitish in lower half of hind-wing, dark fuscous in upper half and in fore-wing. The orange fulvous marking in the fore-wing is variable in intensity.

Underside. As in male.

Distribution. Sarawak (Hewitson's type, much damaged), Singapore, Salanga Isle and Malacca (British Museum).

Thamala marciana, Hew., var. (Plate X, fig. 3).

A single female from Sumatra in the British Museum differs from typical female just described in the whitish-blue colouring at the anal angle being much reduced, not extending above the 3rd median nervule. Underside markings, however, are the same.

480a. *Thamala miniata*, Moore. (Plate X, figs. 4-7).

Myrina marciana, Hewitson, Ill. Diurn. Lep., p. 34, n. 22, pl. xvi, fig. 44, ♂ (1863) (*nec* pl. xii, figs. 12, 13 ♀).

Thamala miniata, Moore, Proc. Zool. Soc. Lond., p. 834, pl. lii, fig. 6 ♂ (1878).

Thamala miniata, de Nicéville, Butterfl. Ind., vol. iii, p. 388, pl. xxviii, fig. 212, ♂ (*nec* fig. 213, ♀) (1890).

Thamala miniata, Swinh., Lep. Ind., p. 198, pl. 740, figs. 4 ♂, 4a ♀, 4b ♂, 4c ♀ (1911).

♂. *Upperside*. *Fore-wing*: scarlet, broadly bordered with fuscous-brown along costa, hind margin and across apex of fore-wing. The median nervure, outer portions particularly of the median nervules, sub-median nervure and base of wing fuscous, but in varying intensity, thus in one example the end of cell is so marked and continued broadly below to 1st median nervule, the hind-marginal border also broadens at anal angle; in another example this band is narrower and of uniform width and other examples show intermediate stages. *Hind-wing*: scarlet, inner marginal border and anteciliary line dark fuscous. In two specimens fuscous spots are present at the base of the two tails.

Underside. Dull brown ochreous to orange ochreous. Sub-marginal line well pronounced in some, hardly noticeable in others. A small transverse whitish bar on inner margin above anal lobe edged above and below with thin fuscous line. Small fuscous markings relieved with a few light scales at base of tails in some specimens, but hardly visible in most. Tail brown ochreous, white-tipped.

♀. *Upperside*. *Fore-wing*: fulvous, with dark fuscous markings as in male, except that the hind-marginal border widens across anal angle, narrowly along inner margin to join basal region of fuscous; this last extends narrowly (broadly in some examples) along and below median nervure to base of 3rd median nervule. Cilia fulvous. *Hind-wing*: costal region fulvous, succeeded in the lower half (in lower three-quarters in some specimens) by fuscous, anal region relieved with grey. The hind-wings are extremely variable; thus the anal grey colouring is practically absent in one specimen, in another extending nearly to end of 1st median nervule. Underside as in male.

Distribution. Tenasserim, Burma, Sumatra (B.M.), Borneo (coll. Druce), Tenasserim (coll. Joicey).

T. miniata, Moore, var.

♂. Thin anteciliary white line at base of tails on upperside of hind-wing. On underside pre-anal bar slightly more pronounced; a dark spot on lobe and another between 1st and 2nd median nervules as in *marciana*. Whitish markings between these two spots, though not above them as in *marciana*. Markings and coloration otherwise agree with *miniata*.

A single example from Hewitson collection in B.M. labelled "Singapore."

The following table shows at a glance the differences by which the two species may be distinguished in each sex.

BOTH SEXES.

I. Tails on underside brown-ochreous, white-tipped, and region on underside of hind-wing showing little if any white and black marking. . . . *T. miniata*.

I¹. Tails on underside white. Anal region on underside of hind-wing well marked with white and black . . . *T. marciana*.

♂.

II. No bluish-white on upperside of hind-wing or heavy fuscous hind-margined border *T. miniata*.

II¹. Anal portion of upperside of hind-wing well marked with bluish-white with heavy fuscous border from base to hind-margin, narrowing to apex *T. marciana*.

♀.

III. Cilia of fore- and hind-wing fulvous brown. Costal region of hind-wing upperside fulvous. . . . *T. miniata*.

III¹. Cilia of fore-wing fuscous and lower half of hind-wing whitish. Costal region of hind-wing dark fuscous, never fulvous *T. marciana*.

492. *Purlisa gigantea*, Dist.

There is a male of this rare species in the Adams collection, now in the British Museum, bearing the

